Food and Agriculture Organization of the United Nations

Effective forest and landscape restoration actions in Lebanon

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A cross-sectoral collaboration between FAO, Lebanon and the Republic of Korea

Deforestation and land degradation threaten the livelihoods and well-being, and the food, water and energy security of millions of people, jeopardizing the resilience of communities worldwide. Over 2 billion hectares (ha) of land – an area the size of South America – are currently degraded, with a resulting loss of fertile soils, biodiversity and carbon stocks.

Forest and landscape restoration (FLR) has the potential to reverse these alarming trends. FLR is a process that aims to recover ecological functionality and enhance human well-being in deforested or degraded landscapes. In this context, the Forest and Landscape Restoration Mechanism (FLRM) was established by the Food and Agriculture Organization of the United Nations (FAO) in 2014, with financial support from the Korea Forest Service (KFS).

The FLRM was created in response to a request by countries to set up a mechanism to leverage multidisciplinary support that could help them meet the ambitious pledges that they made to restore degraded lands under the Bonn Challenge. This aims to bring 350 million ha into restoration by 2030.

The FLRM has been supporting the preparation and implementation of national FLR action plans that comply with the countries' own laws, regulations, policy frameworks and other relevant initiatives and programmes.

As the initial funder of the FLRM, KFS[1] has consistently supported the implementation of FLR activities in Lebanon since 2014 and has agreed to extend its financial support to 2025.

The FLRM projects in Lebanon mainly aim to step up restoration efforts by establishing and strengthening an enabling environment focused on pilot activities that apply suitable FLR approaches. These are designed to contribute to the achievement of national and global restoration targets as set out by the nationally determined contributions (NDCs), the Bonn Challenge, Aichi Targets and Sustainable Development Goals (SDGs).

[1] FAO. 2019. FAO + Republic of Korea – Promoting inclusive and sustainable rural development partnerships. Rome.

Current status of forests in Lebanon and why FLR is urgent

Lebanon is known for its rich forest biodiversity and covers 0.007 percent of the world's land surface area while hosting about 0.8 percent of the world's recorded and catalogued tree species.

Lebanon is one of the most forested countries by total percentage in the Near East today. Forests cover approximately 13 percent of the total land area, but this area is reducing, according to the Forest Resources Assessment conducted by FAO and the Ministry of Agriculture (MoA) in 2005.

The country's forest area is varied and includes 32.2 percent of coniferous, 56.6 percent of broadleaved and 11.2 percent of mixed forest.

In recent years, Lebanon has been affected by alarming rates of environmental degradation caused by two decades of civil war and the rapid economic and population growth that followed, which has increased pressure on the country's natural resources. Lebanon has been facing significant losses in vegetative cover due to the growth and spread of urban areas, forest fires and illegal logging. From 2000 to 2010, the country lost 1 783 ha of forest, 1 201 ha of grassland and 2 257 ha of cropland.[2]

To address and reverse the alarming deforestation trend affecting the country, in 2012, the MoA launched the 40 Million Trees Program. This national afforestation and reforestation effort aims to increase forest cover from 13 percent to 20 percent by 2030, thereby restoring forest cover to 70 000 ha.[3]

To further combat the increasing deforestation trend, Lebanon has actively implemented restoration projects in collaboration with FAO since the first phase of implementation of the FLRM.

[2] Lebanon. 2018. Final National Report on Land Degradation Neutrality Target Setting Programme.
[3] Stanturf, J.A. & Mansourian, S. 2020. Forest landscape restoration: state of play. Royal Society Open Science, 7: 201218. https://doi.org/10.1098/rsos.201218

Restoration of traditional stone terraces

In the past, traditional stone terraces were used for cultivating crops, particularly vineyards. Following the socioeconomic crises that affected the Kadisha Valley, Shouf Biosphere Reserve and El Mhaidthe regions, increased production costs and the lack of marketing opportunities, forced many to leave their villages. As a result, sections of the terraces' stone walls have collapsed from lack of maintenance, and the terraces have been colonized by natural vegetation at different successional stages, from stunted trees and shrubs to dense secondary forest stands. To restore the terraces and their socioeconomic and ecological functions, the FLRM and the MoA have selected several restoration sites to promote the value of stone terrace restoration and encourage farmers to follow the project model.

Project sites: Kadisha Valley, Shouf Biosphere Reserve and El Mhaidthe.

The project aimed to:

- **restore traditional agriculture stone terraces to improve the cultural landscape values and rural livelihoods;**
- **increment capacity development and awareness-raising targeting local communities about sound restoration methodologies and the socio-economic and environmental values of the traditional terraced landscapes.[4]**

Period: 2016-2019 Budget: USD 108 000.

Main activities:

- restoring 17 terrace sites and nine stone walls;
- planting local and productive species (e.g. *Organum syriacum, Punica granatum and Rhus coriaria*); and
- removing competing and invasive vegetation.

Outcomes:

- increasing the resilience of the local community to climate change and soil erosion risks (e.g. reducing soil loss and soil erosion that is otherwise projected to cost the El Mhaidthe community USD 37 795 every year);
- developing methodological models that could potentially be replicated in other Lebanese regions; and
- raising awareness of the value of stone terrace restoration and encouraging farmers to follow the model implemented by the project.

[4] Shouf Biosphere Reserve-Lebaon, 2022, Forest and Landscape Restoration Guidelines; Regaining Landscape Resilience, Ecological Functionality and Human Well-being.

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Enhanced management of productive landscapes through sustainable rangeland practices

Local communities lack specific management plans to sustainably use the rangeland resources of their areas. Furthermore, rangelands are providing less feed for animals, thus forcing community members to buy feed to supplement their flocks' diets at very high prices. Therefore, FAO and the MoA are collaborating to conduct large-scale rangeland management actions to understand the stocking rates and carrying capacities of rangelands to better plan grazing activities, to promote rotational grazing and reduce stocking rates. FAO and the MoA are building local capacities on the tools and techniques needed for efficient rangeland management through planning, implementation and monitoring to achieve these objectives.

Project sites: the municipalities of Jered Tannourine and Manara.

This project aims to rehabilitate and restore degraded and destroyed rangelands and establish sustainable rangeland management.

Period: 2021-2025. Budget: USD 110 000.

Main activities:

- enhancing management of stressed and degraded rangelands in Tannournine (North Lebanon) and Manara (Bekaa);
- promoting community-based management of productive landscapes; and
- supporting dairy value chains to increase productivity and reduce resource waste.

Outcomes:

- reducing the degradation of high-altitude landscapes;
- supporting sustainable local livelihoods;
- helping achieve Lebanon's land degradation neutrality targets; and
- improving Lebanon's response and resilience to climate change by effectively contributing to the NDCs.

Humanitarian Activity in Anjar

The humanitarian crisis in the Syrian Arab Republic continues to impose a heavy burden on Lebanon. Lebanon is currently hosting 1.5 million Syrian refugees officially registered with the United Nations High Commissioner for Refugees, in addition to tens of thousands of Palestinian refugees from the Syrian Arab Republic as well as Lebanese returnees. On a per capita basis, Lebanon currently hosts the largest number of refugees in the world, with registered Syrian refugees accounting for more than 20 percent of the total population. A growing number of Syrian refugees in mountain forest areas are the group most vulnerable to climate change, together with local and rural communities facing poverty. These communities rely on fuelwood for heating and non-wood forest products for part of their livelihoods, such as pine nuts, honey and aromatic and medicinal plants, and ecotourism. As the ecosystems around them are degrading at an alarming rate, FLR and capacity-training activities are essential to ensure the survival and empowerment of these communities.

Project site: the municipality of Anjar.

This project aims to enhance the livelihoods and skills of vulnerable refugees through labour-intensive reforestation and forest management activities.

Period: 2019-2021. Budget: USD 500 000.

Main activities: The project implemented reforestation and forest management activities over an area of 25 ha and along 12 kilometres of road, as well as the sustainable management of 72 ha in Anjar.

- The project trained 119 Syrian refugees on afforestation and reforestation techniques and 73 Syrian refugees on good practices for forest management.
- The project engaged 318 cash-for-work (CFW) beneficiaries (of whom 64 were women), distributing a total of USD 131 000.

Outcomes:

- improving the ecological balance and reducing the risk of forest fires;
- enhancing the technical knowledge, skills and employability of all CFW participants;
- supporting CFW participants in meeting their needs and contributing to their inclusion in the local community; and
- producing around 25 tonnes of fruit and 2 tonnes of aromatic plants annually and sustaining this production in the coming years.

Next steps: Currently, a project that builds on the results of this initiative is in the pipeline and expected to be approved soon. A total of USD 600 000 is expected to support 300 workers, half of whom are refugees, while the other half are vulnerable host communities.

Projects Summary

Name of project	Period	Budget	Outcome
FLRM project (Phase 2): enhanced management of productive landscapes through sustainable rangeland practices	2021–2025	USD 110 000	The project will support the communities of Tannourine (North Lebanon) and Manara (Bekaa Valley) in enhancing the management of over 2 000 ha and 200 ha, respectively. This will support the natural regeneration of the stressed and degraded rangelands in both communities. The project will enhance the livelihoods of local community members through direct support to shepherds with the provision of drinking troughs, veterinary medicines and supplemental feed, and the promotion of sustainable dairy value chains. Furthermore, the management of rangelands will ensure that local communities are less dependent on using costly supplemental feed.
Enhancing the resilience of vulnerable refugee communities through CFW: humanitarian activity in Anjar	2019–2021	USD 500 000	The project implemented restoration activities over 90 ha of land, including reforestation of 25 ha of land and enhanced management of 72 ha of forests. Through its CFW scheme, the project offered short-term work opportunities to 318 participants, enabling them to meet their basic needs. Furthermore, through the technical capacity-building component, it increased the employability of vulnerable Lebanese and Syrians.
FLRM project (Phase 1): restoration of traditional stone terraces	2016–2021	USD 108 000	The project aimed to restore the productive capacity of stone terraces – a typical Mediterranean land management practice – in three regions of Lebanon: Shouf Biosphere Reserve, Qadisha Valley and Mhaidtheh. As such, the project restored several stone terraces over an area of approximately 11.5 ha. The project contributed to the livelihoods of targeted communities in the three regions by promoting implementation of agroforestry and agroecology practices to increase sustainable agricultural production. Furthermore, the project sustained the activities of a women's agricultural cooperative, which provides jobs to over 20 women.

Key conclusions

The Korean-funded FLR work carried out in Lebanon proved to yield many long-term benefits that show the efficacy of restoration activities to restore a balance of the ecological, social and economic benefits in a broad pattern of land uses. Forest and landscape restoration proves essential in a country such as Lebanon where the continued survival of fragile ecosystems and the resilience of vulnerable communities are at stake.

The benefits of the FLR projects implemented in Lebanon include:

- Positive impacts on the environment: The pilot projects in Lebanon have contributed to the restoration of degraded land, increased carbon sequestration through reforestation, and reduced soil erosion and other forms of land degradation. This has positively impacted the environment with improved soil quality, increased biodiversity and better water retention in the soil.

- Socioeconomic benefits: FLR projects have also had positive socioeconomic impacts by creating jobs and income-generating opportunities for local communities, improving food security through agroforestry and conservation agriculture practices, and increasing tourism revenue by promoting sustainable recreational activities.

- Knowledge sharing and capacity building: Local communities and stakeholders have been trained in sound restoration methodologies and have gained knowledge and skills in sustainable land management practices, of which can be applied to other areas in Lebanon, the wider Mediterranean region and beyond.

- Enhanced collaboration and partnerships: The success of the FLR pilot projects in Lebanon has been made possible through collaboration and partnerships between the Lebanese government, FAO and Korea. This demonstrates the importance of international cooperation and partnership in achieving global restoration targets and addressing the challenges of land degradation and climate change.

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www.fao.org/in-action/forest-landscape-restoration-mechanism/

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